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http://www.cas.org/support/stngen/stndoc/properties.html

=> s methylnaltrexone/cn

L1 1 METHYLNALTREXONE/CN

=> d 11

- L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN
- RN 73232-52-7 REGISTRY
- ED Entered STN: 16 Nov 1984
- CN Morphinanium, 17-(cyclopropylmethyl)-4,5-epoxy-3,14-dihydroxy-17-methyl-6oxo-, bromide, (5α)- (CA INDEX NAME)

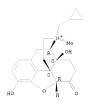
OTHER NAMES:

- CN Methylnaltrexone
 CN Methylnaltrexone bromide
- CN MRZ 2663BR
- CN N-Cvclopropvlmethvl-noroxymorphone methobromide
- CN N-Methylnaltrexone bromide
- CN Naltrexone methobromide
- CN Naltrexone methyl bromide
- FS STEREOSEARCH
- MF C21 H26 N O4 . Br
- LC STN Files: ADISHEMS, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CIN, DPFU, DRUGU, LEMBASE, MISROGHEWS, MISRATENTS, INSRESEARCH, 19A, PROMT, PROUSDDR, RTECS*, SYNTHLINE, TOXCENTER, USAN, USPATZ, USPATFULL (*File contains numerically searchable property data)

one (contains numerically searchable property data)

CRN (83387-25-1)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

141 REFERENCES IN FILE CA (1907 TO DATE)

6 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

SINCE FILE

ENTRY

7.88

TOTAL

8.10

SESSION

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=> file medicine FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

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FILE 'USPAT2' ENTERED AT 17:05:29 ON 26 FEB 2009
CA INDEXING COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)
=> s 11
'CN' IS NOT A VALID FIELD CODE
           472 L1
L2
=> s solution
 33 FILES SEARCHED...
       7560721 SOLUTION
=> 's 11 and 12
'S IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).
=> s 11 and 12
'CN' IS NOT A VALID FIELD CODE
```

```
'CN' IS NOT A VALID FIELD CODE
           472 L1 AND L2
=> s 12 and 13
L5
           49 L2 AND L3
=> s pH
L6
      7717984 PH
=> s chelat?
L7
       666798 CHELAT?
=> s 15 and 16 and 17
L8
            8 L5 AND L6 AND L7
=> dup rem
ENTER L# LIST OR (END):18
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, DGENE, DRUGMONOG2,
IMSPRODUCT, KOSMET, NUTRACEUT, PCTGEN, PHARMAML, USGENE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L8
L9
              8 DUP REM L8 (0 DUPLICATES REMOVED)
=> s 19 and pd<2004
  5 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
 14 FILES SEARCHED...
  16 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
  22 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
  27 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 31 FILES SEARCHED...
             0 L9 AND PD<2004
=> s EDTA or dipotassium edetate or disodium etetate or edetate calcium disodium or sodium
edetate or trisodium edetate or potassium edetate
 21 FILES SEARCHED...
 33 FILES SEARCHED...
       451335 EDTA OR DIPOTASSIUM EDETATE OR DISODIUM ETETATE OR EDETATE CALCI
L11
               UM DISODIUM OR SODIUM EDETATE OR TRISODIUM EDETATE OR POTASSIUM
               EDETATE
```

Jagoe

=> s 15 and 111

```
16 L5 AND L11
L12
=> dup rem
ENTER L# LIST OR (END):112
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, DGENE, DRUGMONOG2, IMSPRODUCT, KOSMET, NUTRACEUT, PCTGEN, PHARMAML, USGENE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIOUE
PROCESSING COMPLETED FOR L12
L13
             16 DUP REM L12 (O DUPLICATES REMOVED)
=> s 113 and pd<2004
   5 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
  14 FILES SEARCHED...
  16 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 22 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
  27 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 31 FILES SEARCHED...
            1 L13 AND PD<2004
L14
=> d 114 ibib, kwic
L14 ANSWER 1 OF 1 USPATFULL on STN
ACCESSION NUMBER:
                        2003:30960 USPATFULL
TITLE:
                        Use of methylnaltrexone to treat immune suppression
INVENTOR(S):
                        Moss, Jonathan, Chicago, IL, UNITED STATES
                        Yuan, Chun-Su, Chicago, IL, UNITED STATES
                        University of Chicago, Chicago, IL (U.S. corporation)
PATENT ASSIGNEE(S):
                            NUMBER
                                          KIND
                                                 DATE
                        -----
PATENT INFORMATION:
                       US 20030022909 A1 20030130
US 2002-163482 A1 20020605 (10)
                                                                     <--
APPLICATION INFO.:
                              NUMBER
                                            DATE
PRIORITY INFORMATION: US 2001-295571P 20010605 (60)
                        US 2002-374454P 20020422 (60)
DOCUMENT TYPE:
                       Utility
FILE SEGMENT:
                       APPLICATION
LEGAL REPRESENTATIVE:
                       Chantal Morgan D'Apuzzo, Wolf, Greenfield & Sacks,
                        P.C., 600 Atlantic Ave., Boston, MA, 02210
NUMBER OF CLAIMS:
                        81
EXEMPLARY CLAIM:
                        1407
LINE COUNT:
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
SHMM
          . . Methylnaltrexone is available in a powder form from
       Mallinckrodt Pharmaceuticals, St. Louis, Mo. Methylnaltrexone can be
       prepared as a sterile solution at a concentration of 5 mg/ml.
       Methylnaltrexone can also be administered as an oral agent in a capsule
       or tablet or in an oral solution.
DETD
      [0089] Blood is drawn from the arm catheter used for methylnaltrexone
       injection into EDTA Vacutainers prelabeled with the study
```

number, subject number and initials, dose number, date, time of sample,

```
at the times indicated. .
   73232-52-7, Methylnaltrexone
        (peripheral opioid antagonists such as methylnaltrexone to treat
        opioid-induced immune suppression)
=> dup rem
ENTER L# LIST OR (END):15
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, DGENE, DRUGMONOG2,
IMSPRODUCT, KOSMET, NUTRACEUT, PCTGEN, PHARMAML, USGENE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L5
L15
            45 DUP REM L5 (4 DUPLICATES REMOVED)
=> s 115 and pd<2004
   5 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
  14 FILES SEARCHED...
  16 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 22 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 27 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 31 FILES SEARCHED...
L16
            3 L15 AND PD<2004
=> d 116 1-3 ibib, kwic
L16 ANSWER 1 OF 3 USPATFULL on STN
                       2003:30960 USPATFULL
ACCESSION NUMBER:
TITLE:
                        Use of methylnaltrexone to treat immune suppression
                       Moss, Jonathan, Chicago, IL, UNITED STATES
Yuan, Chun-Su, Chicago, IL, UNITED STATES
INVENTOR(S):
PATENT ASSIGNEE(S):
                        University of Chicago, Chicago, IL (U.S. corporation)
                           NUMBER
                                        KIND DATE
                        _____
                       US 20030022909 A1 20030130 US 2002-163482 A1 20020605 (10)
PATENT INFORMATION:
                                                                  <--
APPLICATION INFO.:
                             NUMBER DATE
                        -----
PRIORITY INFORMATION:
                       US 2001-295571P 20010605 (60)
                       US 2002-374454P
                                        20020422 (60)
DOCUMENT TYPE:
                       Utility
FILE SEGMENT:
                       APPLICATION
LEGAL REPRESENTATIVE: Chantal Morgan D'Apuzzo, Wolf, Greenfield & Sacks,
                       P.C., 600 Atlantic Ave., Boston, MA, 02210
NUMBER OF CLAIMS:
                      81
EXEMPLARY CLAIM:
                       1
LINE COUNT:
                       1407
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
       . . Methylnaltrexone is available in a powder form from
      Mallinckrodt Pharmaceuticals, St. Louis, Mo. Methylnaltrexone can be
```

prepared as a sterile **solution** at a concentration of 5 mg/ml. Methylnaltrexone can also be administered as an oral agent in a capsule

or tablet or in an oral solution.

73232-52-7, Methylnaltrexone

(peripheral opioid antagonists such as methylnaltrexone to treat opioid-induced immune suppression)

L16 ANSWER 2 OF 3 USPATFULL on STN

ACCESSION NUMBER: 1998:115766 USPATFULL

TITLE: Pharmaceutical compositions comprising an opiate

antagonist and calcium salts, their use for the treatment of endorphin-mediated pathologies

INVENTOR(S): Minoia, Paolo, Via M. Viterbo 12, I-70013 Castellana

Grotte, (Bari), Italy

Sciorsci, Raffaele Luigi, Via Positano, 84/B, I-70014

Conversano, (Bari), Italy

	NUMBER	KIND	DATE		
PATENT INFORMATION:	US 5811451		19980922		<
	WO 9531985		19951130		<
APPLICATION INFO.:	US 1996-737902		19961121	(8)	
	WO 1995-EP1931		19950522		
			19961121	PCT	371 date
			19961121	PCT	102(e) date

NUMBER DATE

PRIORITY INFORMATION: IT 1994-MI1048 19940524 DOCUMENT TYPE: Utility

FILE SEGMENT: Granted

PRIMARY EXAMINER: MacMillan, Keith D. LEGAL REPRESENTATIVE: Bucknam and Archer

NUMBER OF CLAIMS: 17 EXEMPLARY CLAIM:

LINE COUNT: 464

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

The administration of 5 mg of naloxone dissolved in a solution of 50 g of calcium gluconate in 500 ml of sterile water in one cow affected by the above mentioned. . .

40 dogs affected by parvovirus gastroenteritis were treated i.v. daily DETD with a sterile aqueous solution containing naloxone (0.5-1 mg), calcium gluconate (0.5 g), vitamin C (500-1000 mg), vitamin K (1 a) .

50-81-7, Vitamin C, biological studies 125-73-5, Dextrorphan 137-08-6, Calcium pantothenate 299-28-5, Calcium gluconate 465-65-6, Naloxone 591-64-0, Calcium levulinate 814-80-2, Calcium lactate 2520-36-7, Ficine 5001-51-4, Calcium lactobionate 5743-27-1, Calcium ascorbate 5743-34-0, Calcium borogluconate 6384-92-5 7440-70-2D, Calcium, salts 9001-00-7, Bromelin 9001-01-8, Callicrein 9001-09-6, Chymopapain 9001-12-1, Collagenase 9001-73-4, Papaine 9001-75-6, Pepsin 9001-92-7, Protease 9002-07-7, Trypsin 9004-06-2, Elastase 9004-07-3, Chymotrypsin 9014-01-1, Subtilisin 9028-00-6, Clostripain 12001-79-5, Vitamin K 14357-78-9, Diprenorphine 16590-41-3, Naltrexone 17673-25-5, Phorbol 20123-80-2, Calcium dobesilate 20594-83-6, Nalbuphine 29039-00-7, Calcium glucoheptonate 37228-80-1, Proteinase A 39450-01-6 55096-26-9, Nalmefene 56095-64-8 56649-76-4, MR-2266 71276-43-2, Quadazocine 72782-05-9, β-Funaltrexamine 73232-50-5, Methylnaloxonium 73232-52-7 73674-85-8, Naloxazone 75684-07-0, Bremazocine 81669-70-7, Metalloendopeptidase 82823-99-2, Naltrexonazine 82824-01-9,

```
Naloxonazine 89352-67-0, ICI 174864 103429-31-8, CTOP 105618-26-6,
      Norbinaltorphimine 110881-59-9 111555-53-4, Naltrindole
      111555-58-9, Naltriben 126876-64-0, Naltrindole-5'-isothiocyanate
      129468-28-6, 7-Benzylidenenaltrexone 136109-04-1, LY 274614
        (compns. containing opiate antagonist and calcium salts for treatment of
        endorphin-mediated disorders in human and veterinary medicine)
L16 ANSWER 3 OF 3 USPATFULL on STN
ACCESSION NUMBER:
                      79:47543 USPATFULL
TITLE:
                       Quaternary derivatives of noroxymorphone which relieve
                       intestinal immobility
INVENTOR(S):
                       Goldberg, Leon I., Chicago, IL, United States
                       Merz, Herbert, Ingelheim am Rhein, Germany, Federal
                       Republic of
                       Stockhaus, Klaus, Bingen, Germany, Federal Republic of
                       Boehringer Ingelheim GmbH, Ingelheim am Rhein, Germany,
PATENT ASSIGNEE(S):
                       Federal Republic of (non-U.S. corporation)
                            NUMBER KIND DATE
                       _____
PATENT INFORMATION: US 4176186 19791127
APPLICATION INFO.: US 1978-928821 19780728 (5)
                                                                 <--
DOCUMENT TYPE:
                      Utility
FILE SEGMENT:
                       Granted
PRIMARY EXAMINER: Daus, Donald G. ASSISTANT EXAMINER: Rivers, Diana G.
LEGAL REPRESENTATIVE: Hammond & Littell
NUMBER OF CLAIMS:
EXEMPLARY CLAIM:
                       1,3,4
LINE COUNT:
                       413
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
DETD An excess of concentrated ammonia was added to a concentrated aqueous
       solution of 18.2 gm (0.05 mol) of N-allyl-noroxymorphone
       hydrochloride, whereupon the free base precipitated, which was separated
       by extraction with chloroform.. . . dried with sodium sulfate and
       evaporated in vacuo. The residue was dissolved in 150 ml of absolute
       acetone, the resulting solution was admixed with 18 ml (0.29
       mol) of methyl iodide in a pressure vessel, the vessel was sealed, and
       the. .
            . the free base as described in Example 1. The free base was
       dissolved in 180 ml of absolute acetone, the solution was
       admixed with 33.0 ml (0.6 mol) of methyl bromide in a pressure vessel,
       the vessel was sealed, and its. .
       . . base was dissolved in 40 ml of absolute acetone, 3.8 qm (0.03
       mol) of dimethyl sulfate were added to the solution, and the
       mixture was refluxed for 48 hours, during which time an oil gradually
       separated out. Thereafter, the oil was. . .
      . . . (0.0256 mol) of N-allyl-noroxymorphone metholodide, prepared in
       accordance with Example 1, were dissolved in 500 ml of water, and the
       solution was filtered through a column charged with a strongly
       basic anion exchanger (bromide-loaded anion exchanger, 171 gm, with an
       exchange. . . 70° C. The residue was dissolved in 100 ml of
       methanol, and 100 ml of ether were added to the solution,
       whereupon 9.65 gm (92% of theory) of the methobromide, m.p. 245°
      C., separated out. After recrystallization from methanol it had. . .
      . . were dissolved in a mixture consisting of 50 ml of absolute
      acetone and 0.5 ml of dimethylformamide, and the resulting
```

solution was admixed with 4.25 qm (44.8 millimols) of methyl bromide. The reaction mixture was then allowed to stand for three. . .

DETD

DETD

DETD

DETD

- DETD . hydrochloride in Example 1. The free base was dissolved in 50 ml of absolute acetone in a pressure vessel, the **Solution** was admixed with 8 ml (0.128 mol) of methyl iodide, the vessel was sealed, and the reaction mixture was heated.
- DETD . millimols) of N-propargyl-noroxymorphone were dissolved in a mixture consisting of 30 ml of methanol and 20 ml of dimethylformamide, the <u>solution</u> was admixed with 6.8 gm (71.6 millimols) of methyl bromide, and the mixture was heated at 70°C. in a.
- DETD ... methylene chloride, 3.4 gm (0.033 mol) of tricthylamine were added and, while cooling the mixture on an Ice bath, a solution of 2.6 gm (0.033 mol) of acetyl chloride in absolute methylene chloride was admixed therewith. The ice bath was then. reaction mixture was slowly allowed to warm to room temperature and was subsequently refluxed for one hour. Thereafter, the reaction golution was cooled, washed twice with ice water, dried with sodium sulfate and evaporated in vacuo, leaving as the residue 0.sup.3.
- DBID . in analogy to the procedure of Example 2. After a reaction time of seven days at 70° C., the reaction <u>solution</u> was evaporated in vacuo, leaving as the residue 0.sup.3 -acety1-N-ally1-noroxymorphone methobromide.
- DETD (c) The evaporation residue obtained in step (c) was dissolved in 1 N hydrothormic acid, and the <u>solution</u> was evaporated in vacuo on a water bath at 60° C. The residue was crystallized as described in Example 2.
- DETD ... was dissolved in 60 ml of absolute methylene chloride. While stirring and cooling it on an ice bath, the resulting <u>solution</u> was admixed with 2.22 gm (0.015 mol) of trimethyloxonium fluoroborate. After 1 hour the ice bath was removed, and the mixture was stirred for sixteen hours at room temperature. Thereafter, the reaction <u>solution</u> was evaporated, the residual quaternary fluoroborate was dissolved in 150 ml of water, and the <u>solution</u> was filtered, in analogy to Example 2, through a strong basic anion exchange column (175 gm, OH-form, about 0.25 Val), and the column was rinsed with about 1 liter of water. The combined aqueous <u>solutions</u> were then acidified with concentrated hydrobrmic acid (PH about 3) and subsequently evaporated in vacuo on a water bath at.
- DETD . . mol) of trans-3-chloroallyl chloride and 70 ml of dimethylformamide was stirred for four hours at 90° C. Thereafter, the reaction <u>solution</u> was evaporated in vacuo, and the residue was shaken with a mixture of 75 ml of chloroform and 75 ml.
- DETD The hydrochloride, m.p. 243° C., was obtained by dissolving the base in methanolic hydrochloric acid and adding ether to the solution until it just turned cloudy.
- DETD ... hydrochloride, m.p. 202° C., was obtained by dissolving the base in ethanolic hydrochloric acid and adding ether thereto until the solution just began to turn cloudy.
- DETD . a portion of the inert excipients, and the mixture is granulated in conventional manner with the aid of an aqueous solution of the soluble starch. The granulate is then dried and admixed with the remainder of the inert excipients, and the. . .
- DETD Hypodermic solution
- DETD The solution is compounded from the following ingredients:
- DETD The active ingredient and the sodium chloride are dissolved in the distilled water, the solution is filtered until free from

```
suspended particles, and the filtrate is filled into 5 cc-ampules which
       are sterilized and sealed.. . .
      Drop solution
DETD
      The solution is compounded from the following ingredients:
DETD
      The active ingredient and the p-hydroxy-benzoates (preservatives) are
DETD
       dissolved in the de-mineralized water, the solution is
       filtered, and the filtrate is filled into 100 ml-bottles. 5 ml of the
       solution are an oral dosage unit composition containing 50 mgm
       of the active ingredient.
                                 73232-49-2P 73232-51-6P 73232-52-7P
      73232-44-7P 73232-48-1P
      73232-53-8P 73232-54-9P 73232-56-1P 73246-51-2P
        (preparation of)
=> s disodium edetate
         4470 DISODIUM EDETATE
L17
=> d his
     (FILE 'HOME' ENTERED AT 17:04:33 ON 26 FEB 2009)
     FILE 'REGISTRY' ENTERED AT 17:04:47 ON 26 FEB 2009
             1 S METHYLNALTREXONE/CN
     FILE 'ADISCTI. ADISINSIGHT. ADISNEWS. BIOSIS. BIOTECHNO. CAPLUS. DDFB.
     DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ESBIOBASE,
     IFIPAT, IMSDRUGNEWS, IMSPRODUCT, IPA, KOSMET, LIFESCI, MEDLINE,
     NAPRALERT, NLDB, NUTRACEUT, PASCAL, PCTGEN, PHARMAML, ... 'ENTERED AT
     17:05:29 ON 26 FEB 2009
L2
            472 S L1
L3
        7560721 S SOLUTION
            472 S L1 AND L2
L4
L5
             49 S L2 AND L3
        7717984 S PH
L6
        666798 S CHELAT?
L8
             8 S L5 AND L6 AND L7
1.9
              8 DUP REM L8 (0 DUPLICATES REMOVED)
T-10
              0 S L9 AND PD<2004
        451335 S EDTA OR DIPOTASSIUM EDETATE OR DISODIUM ETETATE OR EDETATE CA
L12
             16 S L5 AND L11
L13
            16 DUP REM L12 (O DUPLICATES REMOVED)
L14
             1 S L13 AND PD<2004
L15
            45 DUP REM L5 (4 DUPLICATES REMOVED)
L16
             3 S L15 AND PD<2004
L17
          4470 S DISODIUM EDETATE
=> s 111 or 117
L18
       453892 L11 OR L17
=> s 118 and 12
           17 L18 AND L2
L19
-> dup rem
ENTER L# LIST OR (END):119
DUPLICATE IS NOT AVAILABLE IN 'ADISINSIGHT, ADISNEWS, DGENE, DRUGMONOG2,
IMSPRODUCT, KOSMET, NUTRACEUT, PCTGEN, PHARMAML, USGENE',
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIOUE
PROCESSING COMPLETED FOR L19
            17 DUP REM L19 (O DUPLICATES REMOVED)
```

```
=> s 120 and pd<2004
  5 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
'2004' NOT A VALID FIELD CODE
 14 FILES SEARCHED...
 16 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 22 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 27 FILES SEARCHED...
'2004' NOT A VALID FIELD CODE
 31 FILES SEARCHED...
```

=> d 121 ibib, kwic

L21

L21 ANSWER 1 OF 1 USPATFULL on STN

ACCESSION NUMBER: 2003:30960 USPATFULL

1 L20 AND PD<2004

TITLE: Use of methylnaltrexone to treat immune suppression

INVENTOR(S): Moss, Jonathan, Chicago, IL, UNITED STATES Yuan, Chun-Su, Chicago, IL, UNITED STATES

University of Chicago, Chicago, IL (U.S. corporation) PATENT ASSIGNEE(S):

NUMBER KIND DATE PATENT INFORMATION: US 20030022909 A1 20030130 <--A1 20020605 (10) APPLICATION INFO.: US 2002-163482

NUMBER DATE

-----PRIORITY INFORMATION: US 2001-295571P 20010605 (60) US 2002-374454P 20020422 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION LEGAL REPRESENTATIVE: Chantal Morgan D'Apuzzo, Wolf, Greenfield & Sacks,

P.C., 600 Atlantic Ave., Boston, MA, 02210

NUMBER OF CLAIMS: 81 EXEMPLARY CLAIM: LINE COUNT: 1407

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

[0089] Blood is drawn from the arm catheter used for methylnaltrexone injection into EDTA Vacutainers prelabeled with the study number, subject number and initials, dose number, date, time of sample, at the times indicated. .

IT 73232-52-7, Methylnaltrexone

(peripheral opioid antagonists such as methylnaltrexone to treat opioid-induced immune suppression)